

larval supply at Samui Island was relatively high. However the density of juvenile colonies observed on reef substrates was very low. There were available substrates for coral settlement mainly dead corals, but they were covered quickly by algal turfs and sediment. Coral reef recovery at Samui Island may be delayed because of abundant algal turfs and coral stress by high sedimentation. Appropriate management strategies to prevent high sediment inputs from developed catchments and coastal areas are proposed.

ICZM in the era of the basic act on Japanese Ocean policy: the role of local governments - case of Tottori Prefecture

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The year 2007 was a turning point in Ocean management by Japan. In April, the Basic Act on Ocean Policy was enacted and Japan stood at the starting line of cross-sectoral comprehensive ocean management. Article 25 stipulates the integrated coastal zone management (ICZM), the first time this stipulation has appeared in Japanese statute act. In November, the Third National Strategy for the Conservation and Sustainable Use of Biological Diversity was announced. It is the first to include content related to the problem of biological diversity conservation in coastal zones.

What kinds of initiatives should local governments take concerning coastal Management in response to this trend? This paper reports on a study of the role of local governments in coastal zones management in the present age of the Basic Act on Ocean Policy. The study focused on a case in Tottori Prefecture: a prefecture facing the Japan Sea, home to the smallest prefectural population in Japan, a place endowed with a beautiful coastal zone including the well-known Tottori Sand Dunes, and the site of Japan's first advanced initiative under the Integrated Soil and Sand Management Plan.

Investigation on fish market wastewater characteristics in Lempasing, Bandar Lampung, Indonesia

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The Lempasing fish market is the fish auction center, located near the coastal area of Bandar Lampung City, Lampung Province, Indonesia. Due to the inefficiency of wastewater treatment facilities, the water quality of the coastal nearby becomes deteriorated. In this research, we investigate the fish market activities condition in related to the wastewater generated. We took samples of wastewater from the fish vendors when they finished washing the fishes. Water samples were also taken from three points of the coastal area. The results show that BOD concentration of wastewater reached 160 mg/l, COD concentration reached 528 mg/l, TSS concentration up to 150 mg/l, and E. coli number was more than 1420 cell/100ml. Those values were over the standard limit. From the seawater samples analysis, the results show that dilution and distribution effect of the sea dispersed the contaminants offshore. However, the number of *E. coli* was still high (>2800 cell/100ml) and it appeared that the coastal sediment contained high septic decomposed organic matter. The dissolved oxygen was as low as 4.5 mg/l. It is recommended that wastewater treatment facility includes units of filter, sedimentation, and filter press for sludge handling.

Concept of integration in shoreline management

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The significance of integration in coastal zone management has been the topic of various issues and comments and the investigation in this variety expresses each commentator's span of vision. Governments, private organizations, national institutions, scientists and researchers, experts and professionals have explained "integration" from their own point of view and each explanation can be an exact description in the related specific situation. For instance, although in some Pacific or Asian countries this word has been utilized in a vast extent as an indicator to a suitable policy from cultural and executive point of view, the authorities in Australia do not agree with the utilization of this word as they believe it might

not be in coordination with the fragmented Australian official and governmental system. Perhaps this disagreement is due to the difference between "integration" and "coordination".

An integrated system is a complete and comprehensive system, although it may have subordinate components. But a coordinated system owns independent and usually equivalent components working for a common purpose. On the other hand, a kind of spatial point of view governs the meaning of integration in integrated coastal zone management. Spaces considered in the integrated coastal zone management are as follows:

Coastal zones, near shore waters, offshore waters and open seas Although the natural phenomena in these four zones are similar, the integration of management systems in these zones faces different obstacles due to the various differences in the nature of possessions, governmental revenues and organizations ruling them. (Table no. 1)

Table 1 Different possessions, governmental revenues and organizations in land and sea spaces

Zone	Land	Coastal Zones	Nearshore Seas	Offshore Seas	Open Seas
Possession	Private	Private or Public	Usually Public		
Governmental Venue	Local or Provincial	Local and Provincial	Local and Provincial	Usually Nationally	Usually Internationally
Ruling Organizations	Multipurpose Governmental Organizations		Monopurpose Provincial or National Organizations		

Integration can be considered in diverse levels referring to different aspects as follows: Intergovernmental integration in different levels, land and sea integration with a powerful relation between activities performed in these two circumstances intersect oral integration between governmental and private organizations, spatial integration between land based and sea based activities and integration between science and technology. The mentioned items are introduced by other integration aspects in coastal zones like institutional, temporal, management and international integrations. There is every reason to say that the integration in coastal zones shall be diametrical in most occasions. The diametrical integration explains that the various levels of organizations shall be participated according to the discussed integration topic.

The authentic management of coastal zones requires consideration of different effective factors. The word "integration" is selected because it may be the only word to imply this meaning. Nevertheless, the concept of integration differs from its current concept. It should be mentioned that the purpose of integration is not combination of factors in a country or a region and it emphasizes on further coordination. Finally, the different integration levels are necessary to be assessed and evaluated in coastal zone management. In this way proper criteria shall be designed. In other word, confidence of integration existence is more important than integration word existence

References

- ADB (2000). Environments in Transition: Cambodia, Lao PDR, Thailand, Vietnam. Manila, Asian Development Bank
- Australia, SUMMARY OF OCEAN AND COASTAL PROGRAMS
<http://www.globaloceans.org/country/australia/australia.html>
- Denmark, SUMMARY OF OCEAN AND COASTAL PROGRAMS
<http://www.globaloceans.org/country/denmark.html>
- Australia, SUMMARY OF OCEAN AND COASTAL PROGRAMS
<http://www.globaloceans.org/country/australia/australia.html>
- Committee for Land Policy, <http://www.goscomzem.ru/newseng/homeng.htm> February 2000
- <http://www.globaloceans.org/country/denmark.html>
- DEST, 1995, Living on the Coast- the Commonwealth Coastal Policy, Department of Environment, Sport and Territories,
- DOE 1996, Canadian National Environmental Indicator Series. Indicator: air toxics in Canadian cities: benzene, electronic
- Sustainable Development. Last update October 1999. Finland, SUMMARY OF OCEAN AND COASTAL PROGRAMS <http://www.globaloceans.org/country/finland.html>
- United Kingdom, SUMMARY OF OCEAN AND COASTAL PROGRAMS